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ABSTRACT

The major purpose of this study was to identify unique effects of cooperative vocational education. This interim report is of results of the analyses of existing data bases. Comparisons of cooperative and non-cooperative vocational programs are made on the following variables: enrollments by age, sex and race, school status, work status, first-year followup wage, and employer evaluations. The major conclusion of this phase of the study is that cooperative vocational education has not demonstrated any unique effects on the variables studied. However, cooperative vocational education enhances sex equality in enrollment in most program areas. A few of the trade and industrial program areas that have been totally male-dominated, i.e., auto body repair, auto mechanics, carpentry, electricity, machine shop, and welding have not been affected by cooperative programs. Further study should consider additional variables such as student aptitudes, level of skill achievement, and job advancement. (Author/KC)

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COMPARISONS OF COOPERATIVE AND NON-COOPERATIVE STUDENTS: AN ANALYSIS OF STUDENT ACCOUNTING SYSTEM DATA

Interim Report, June, 1981

written by

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U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

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ABSTRACT

Title: Comparisons of Cooperative and Non-Cooperative Students: An Analysis of Student Accounting System Data. Interim Report, June, 1981

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The major conclusion of this phase of the study is that cooperative vocational education enhances sex equality in enrollment in most program areas. A few of the Trade and Industrial program areas that have been totally male-dominated, i.e., auto body repair, auto mechanics, carpentry, electricity, machine shop, and welding have not been affected by cooperative programs.

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COMPARISONS OF COOPERATIVE AND NON-COOPERATIVE STUDENTS: AN ANALYSIS OF STUDENT ACCOUNTING SYSTEM DATA

Introduction

The Research Unit of the Oklahoma State Department of Vocational and Technical Education has been charged with the task of identifying unique effects of cooperative vocational education on students. Our initial effort has been to look at our present data systems for two purposes: (1) to identify and analyze variables on which sufficient data is already available, and (2) to identify variables on which additional data are needed.

The Student Accounting System was selected as a starting point for the study. Within that system are data required in VEDS federal reports which relate to congressional intent for vocational education. The system also contains data relating to planning and to evaluation of local programs. These data, then, relate to the purposes of vocational education nationally and at the state level.

This report gives the results of our analyses of the Student Accounting System data. There are, however, several definitions, limitations, and assumptions which should be set forth before presenting the results:

1. Enrollment, completion, and follow-up data for the school years 1976-77, 1977-78, and 1978-79 are analyzed in this study. Wage data and employer evaluations were available only for the 1978-79 school year. In addition, wage and employer data were obtained only on those students who were employed in training-related jobs.

2. Analyses are made only on secondary school programs and only those secondary programs which are considered to be occupational. Consumer and homemaking programs and such special programs as CVET and career orientation or exploration were not analyzed.

3. Cooperative students and programs were those programs specifically identified as cooperative in the Student Accounting System. All programs not identified as cooperative were considered to be the non-cooperative or school laboratory type programs. An assumption of the study was that all students in cooperative vocational programs were cooperative students and that none of the students in non-cooperative programs were cooperative students.

4. Due to the many occupations represented in the cooperative programs, the result output had to be classified by occupational objective rather than by program type. Occupational objectives were arbitrarily combined in a number of cases to more clearly equate to the non-cooperative programs offered at the secondary level.

   A. Vocational agriculture occupational objectives were combined to represent vocational agriculture, agricultural mechanics, and horticulture programs.

   B. All distribution/marketing occupational objectives were combined to represent project D.E. programs.

   C. All business and office occupational objectives were combined in one category.

5. After obtaining results of 1978-1979 enrollment data categorized by occupational objective and by coop/non-coop programs,

additional combining of occupational objectives was accomplished. Those occupational objectives which were selected by less than twenty students in either the coop or non-coop category were combined in division occupational categories. This activity, accomplished to avoid small numbers, resulted in categories arbitrarily named "health services," "other home economics," and "other T & I."

6. It was assumed that the Student Accounting System data encompassed almost 100 percent of the student cases in the three years studied. No probability statistics were deemed necessary to identify the differences among coop and non-coop students. The descriptive percentages listed on the following pages should accurately represent population parameters.

Results

Table I is an overall summary table of the three-year data which compares the cooperative and non-cooperative groups on enrollment by sex, enrollment by race, school status, and work status. Table II is a summary of the one-year data comparing the two groups on wages and on employer evaluations.

Table I, based on 103,601 student records, indicates that the cooperative programs have less sex bias than do the non-cooperative programs. With regard to racial bias, the indication is much less clear--cooperative programs enrolled a larger percentage of American Indians. Total Oklahoma population figures listed with the enrollment by race indicate little racial bias. With regard to school status,

TABLE I

SUMMARY COMPARISONS OF COOP/NON-COOP STUDENTS
FROM THREE-YEAR (1976-1979) SAS DATA

Enrollment by Sex

	Coop Percent		Non-Coop Percent	
	Female	Male	Female	Male
Female Oriented Programs	71.1	28.9	87.6	12.4
Male Oriented Programs	26.0	74.0	7.1	92.9
All Occupational Programs	61.4	38.6	22.8	77.2

Enrollment by Race

	Coop Percent	Non-Coop Percent	Total Oklahoma Population Percent
Indian	5.0	6.4	5.6
Black	9.2	6.2	6.7
Hispanic	1.2	.7	1.8
White	83.9	86.0	85.8
Asian	.7	.7	1.7

School Status

	Coop Percent	Non-Coop Percent
Still in School	30.2	53.7
Left School	11.2	11.6
Graduated	58.6	34.7

Follow-up Status

	Coop Percent	Non-Coop Percent
Continuing Education	32.0	28.5
In the Labor Market	67.2	69.6
Employed Related	74.8	53.5
Unemployed	5.1	5.6
Unknown	8.9	7.8

TABLE II

SUMMARY COMPARISONS OF COOP/NON-COOP STUDENTS
FROM ONE YEAR (1978-1979) SAS DATA

Wages

	Coop	Non-Coop
Estimated Mean	$4.06	$4.76

Relative Preparation

	Coop Percent	Non-Coop Percent
Better Prepared	85.8	84.6
About the Same	13.8	14.7
Less Well-Prepared	.4	.7

Ratings of Employers: (1 = Very Poor; 5 = Very Good)

Attribute	Coop Rating	Non-Coop Rating
Work Quality	4.41	4.22
Technical Knowledge	4.25	4.14
Work Attitude	4.46	4.32
Overall Rating	4.39	4.22

there appear to be great differences in graduates and those still in school, however, such differences can probably be explained by the much larger percentage of one-year cooperative programs and multi-year non-cooperative programs. With regard to follow-up status, the major difference is in the greater percentage of cooperative graduates employed in jobs related to their training.

Data in Table II are based on 4,668 graduates from 1978-79 who were employed in jobs related to their training. Employer ratings were higher for cooperative students in every category yet the wages of the cooperative students were lower. There are several reasons to suspect the data obtained in the first year's efforts to obtain wage and employer data. Cooperative teachers may have reported wages of students while in the cooperative program rather than seeking wage data several months after the students graduated. Because of that possibility and because of the small number involved, it is doubtful that any realistic conclusions should be made. Certainly, the wage variable should be studied further.

Tables III through XI are more detailed displays of the variables in the study. Table XII lists the numbers of students in the study.

As illustrated in Table III, there are some greater sex biases in the cooperative programs than in the non-cooperative programs. During the three-year period studied, there were no females in cooperative programs in carpentry, electricity, or machine shop. There was only one female each in auto body and welding, and only two in auto mechanics. Overall, the cooperative programs showed less bias with regard to the male oriented T & I occupations, however, those listed above have not "cracked the door" for females. It should also be noted that the non-

TABLE III
THREE-YEAR (1976-1979) COOP/IN-SCHOOL ENROLLMENTS
PERCENT BY SEX

Occupational Objective	Cooperative		In-School	
	Female	Male	Female	Male
Production Agri.	7.7	92.3	9.7	90.3
Other Agriculture	15.0	85.0	8.5	91.5
Total Agriculture	11.7	88.3	9.3	90.7
Distributive Educ.	61.2	38.8	82.4	17.6
Health Services	88.3	11.7	95.5	4.5
Food Management	57.0	43.0	68.0	32.0
Child Care	91.7	8.3	99.3	.7
Other Home Economics	73.9	26.1	95.8	4.2
Total Home Econ.	73.3	26.7	87.8	12.2
Business & Office	90.3	9.7	91.7	8.3
Auto Body Repair	1.7	98.3	.6	99.4
Auto Mechanics	.7	99.3	2.3	97.7
Carpentry		100	1.1	98.9
Electricity		100	1.1	98.9
Electronics	10.4	88.6	4.8	95.2
Printing	14.9	85.1	53.3	46.7
Machine Shop		100	3.6	96.4
Welding	1.3	98.7	1.6	98.4
Custodial Services	19.0	81.0	6.9	93.1
Other T&I, Male Bias	37.7	62.3	7.5	92.5
Other T&I, Female Bias	63.4	36.6	89.1	10.9
Total T&I, Male Bias	29.1	70.9	3.7	96.3
Total T&I, Female Bias	46.8	53.2	76.6	23.4
Total, T & I	30.0	70.0	13.0	87.0
Grand Total, All Female Oriented	71.1	28.9	87.6	12.4
Grand Total, All Male Oriented	26.0	74.0	7.1	92.9
Grand Total	61.4	38.6	22.8	77.2

cooperative printing programs have reasonably balanced enrollments while few females are in printing in the cooperative programs.

Table IV lists enrollments by race. Most notable in that table is the reverse bias in food management, child care, and custodial services. The percentage of blacks in those three program areas is extremely high compared to population percentages. These three areas appear to be among the lowest paid occupational areas listed.

Table V lists completion data and must be interpreted carefully. Cooperative business and office programs have the highest completion rates and correspondingly lowest retention in school rates, however, almost all of those programs are one-year programs for seniors. Perhaps the most notable, though discouraging, results on the table are the high dropout rates in cooperative areas of auto mechanics, carpentry, electricity, machine shop, and welding. High dropout rates in the non-cooperative programs are in food management, child care, other home economics areas, and printing.

Tables VI and VII list status percentages of graduates. The percentages unknown are based on total graduates. The percentages continuing education and in the labor market are based on graduates whose status was known. The percentages employed related and not employed are based on the total graduates in the labor market. It should be noted that the 1978-79 follow-up data records students who are both in the labor market and continuing education, therefore, the two percentages may add up to greater than 100 percent. The cooperative welding area is a good example with almost all graduates in the labor market and over 13 percent continuing their schooling. Unemployment, for the age group, is extremely low except in cooperative electricity and non-cooperative D.E., home economics, and business and office.

TABLE IV
THREE-YEAR (1976-1979) COOP/IN-SCHOOL ENROLLMENTS
PERCENT BY RACE

Occupational Objective	Cooperative					In-School				
	Indian	Black	Hispan	White	Asian	Indian	Black	Hispan	White	Asian
Production Agriculture	1.7	1.5	.5	91.6	.7	4.5	1.7	.5	92.8	.5
Other Agriculture	7.8	1.2	.6	89.8	.6	5.8	2.9	.5	90.0	.8
Distributive Education	3.9	10.4	1.1	83.9	.8	8.7	9.2	2.4	77.8	1.8
Health Services	7.5	11.5	2.6	77.0	1.4	9.9	9.5	.7	79.2	.7
Food Management	4.4	37.7	2.3	55.3	.3	7.7	20.3	.7	71.0	.3
Child Care	3.8	50.0	.3	45.2	.6	6.6	35.0	1.6	56.4	.4
Other Home Economics	8.0	19.0	.8	72.5	.7	9.3	18.3	.9	70.7	.7
Business & Office	5.7	10.5	.9	82.4	.4	10.2	10.8	.7	77.1	1.1
Auto Body Repair	1.2	3.5	1.2	94.1		5.5	6.1	1.3	86.6	.6
Auto Mechanics	7.2	1.8	2.9	87.4	.7	7.2	6.5	1.2	84.5	.5
Carpentry	6.6	5.7	1.7	86.0		10.1	6.2	.8	82.3	.6
Electricity	9.8	6.3	1.8	82.1		8.3	4.7	1.4	84.9	.7
Electronics	12.5	12.5		75.0		5.1	9.0	1.4	83.2	1.2
Printing	6.7	5.3		88.0		9.8	6.3	1.4	82.1	.4
Machine Shop		1.6	1.6	96.7		4.0	6.5	.9	86.1	2.5
Welding	12.7	5.1	2.5	79.7		7.4	10.2	.9	81.0	.4
Custodial Services	14.3	26.5	1.6	56.6	1.0	7.4	25.6	.8	66.1	.1
Other T & I	4.6	5.7	1.9	87.0	.8	5.4	10.6	.9	82.6	.5
TOTAL	5.0	9.2	1.2	83.9	.7	6.4	6.2	.7	86.0	.7

TABLE V
THREE-YEAR (1976-1979) COOP/IN-SCHOOL ENROLLMENTS
PERCENT BY SCHOOL STATUS

Occupational Objective	Cooperative			In-School		
	Still in School	Left School	Grad	Still in School	Left School	Grad
Production Agri.	41.0	9.1	49.9	71.6	5.2	23.1
Other Agriculture	34.1	10.9	55.0	68.8	6.6	24.6
Distributive Educ.	37.9	11.1	51.0	36.9	12.7	50.4
Health Services	34.3	12.6	53.1	20.9	14.8	64.3
Food Management	36.9	13.1	50.0	39.8	24.5	35.7
Child Care	34.5	14.0	51.5	41.3	19.6	39.1
Other Home Econ.	26.4	10.5	63.1	50.5	20.4	29.1
Business & Office	9.6	5.5	84.9	20.1	16.5	63.4
Auto Body Repair	36.2	17.2	46.6	46.7	17.9	35.3
Auto Mechanics	24.9	32.4	42.7	49.9	14.3	35.8
Carpentry	25.5	21.9	52.6	51.1	14.7	34.2
Electricity	27.1	21.9	51.0	45.8	14.5	39.7
Electronics	23.4	10.6	66.0	50.5	13.4	36.1
Printing	35.8	9.0	55.2	46.7	19.4	33.9
Machine Shop	26.3	24.6	49.1	44.7	14.8	40.5
Welding	26.7	21.3	52.0	43.8	16.0	40.2
Custodial Service	30.4	14.6	55.0	41.4	11.8	46.8
Other T & I	29.7	16.1	54.2	46.1	17.4	36.5
TOTAL	30.2	11.2	58.6	53.7	11.6	34.7

TABLE VI
THREE-YEAR (1976-1979) COOP/IN-SCHOOL GRADUATES
PERCENT CONTINUING EDUCATION OR UNKNOWN

Occupational Objective	Cooperative		In-School	
	Continuing Education	Unknown	Continuing Education	Unknown
Production Agri.	25.7	6.4	39.8	4.5
Distributive Educ.	33.1	8.6	15.9	19.3
Health Occupations	35.3	8.4	27.5	10.1
Child Care	32.9	16.5	30.8	9.9
Other Home Econ.	26.7	14.5	26.8	11.8
Business & Office	38.3	5.6	27.8	12.0
Auto Mechanics	19.8	8.8	20.3	8.8
Carpentry	17.5	7.8	17.7	7.5
Electricity	25.0	9.1	23.1	7.6
Welding	13.5	12.9	14.5	11.7
Custodial Services	25.0	16.6	3.7	5.7
Other T & I	21.5	12.2	24.6	11.6
TOTAL	32.0	8.9	28.5	7.8

TABLE VII
THREE-YEAR (1976-1979) COOP/IN-SCHOOL GRADUATES
PERCENT BY WORK STATUS

Occupational Objective	Cooperative In Labor Market	Cooperative Employed Related	Cooperative Not Employed	In-School In Labor Market	In-School Employed Related	In-School Not Employed
Production Agri.	75.0	75.9	1.4	60.5	64.8	3.5
Distributive Educ.	68.0	72.7	5.3	48.6	51.6	28.7
Health Services	55.6	83.0	2.0	66.3	72.2	6.9
Child Care	65.1	59.8	6.2	57.0	39.2	17.9
Other Home Econ.	66.9	67.0	5.6	65.0	50.7	12.4
Business & Office	59.1	79.1	6.2	66.4	66.9	8.6
Auto Mechanics	83.7	84.6	.8	79.7	55.5	4.4
Carpentry	86.8	78.6	1.8	82.1	58.7	4.2
Electricity	82.0	76.0	14.0	77.3	64.7	2.9
Welding	97.8	77.8	2.2	84.0	72.2	2.5
Custodial Serv.	68.1	77.4	3.2	60.8	86.2	3.8
Other T & I	75.4	74.7	4.2	75.9	63.1	5.6
TOTAL	75.4	74.7	4.2	75.9	63.1	5.6

It has been previously mentioned that wages of cooperative graduates were lower than those of non-cooperative graduates. Table VIII indicates the wage differential is particularly noted in Health and T & I areas.

Tables IX and X give detail by occupational type to employer ratings. Consistently better ratings were given to cooperative graduates in every area except Distributive Education. Project D.E. students rated better in technical knowledge, work attitude, work quality, and overall, but according to data in Table XI, were not rated as well on relative preparation. Such results are further confounded by the high unemployment rate of project D.E. students.

TABLE VIII
1978-1979 COOP/IN-SCHOOL GRADUATES
EMPLOYED IN RELATED OCCUPATIONS BY WAGES

Occupational Area	Cooperative					In-School				
	$3.50 or less	$3.50 5.50	$5.50 7.50	$7.50 9.50	$9.50 or more	$3.50 or less	$3.50 5.50	$5.50 7.50	$7.50 9.50	$9.50 or more
Vocational Agri.	22.2	33.3	22.2	11.1	11.1	24.9	45.6	17.9	6.4	5.2
Distributive Educ.	48.2	39.3	9.7	2.5	.4	34.6	48.1	17.3	-	-
Health Services	72.2	27.8	-	-	-	24.1	65.3	10.5	-	-
Home Economics	73.7	18.4	7.9	-	-	79.0	19.8	-	1.2	3.7
Business & Office	43.2	53.9	2.1	.7	-	43.6	53.0	3.2	.1	.1
Trade & Industrial	37.6	47.5	12.9	1.2	.8	11.4	49.1	30.2	6.0	3.4
TOTAL	45.3	44.9	7.7	1.6	.4	24.6	51.7	18.2	3.4	2.2
Estimated Mean Wage			$4.06					$4.76		
Number of Graduates Followed			1,266					3,192		

TABLE IX
1978-1979 COOP/IN-SCHOOL GRADUATES
EMPLOYER RATINGS OF WORK QUALITY (PERCENTS)

Occupational Area	Cooperative Ratings*					In-School Ratings				
	1	2	3	4	5	1	2	3	4	5
Vocational Agriculture	-	11.1	-	44.4	44.4	1.9	.8	14.3	43.0	40.0
Distributive Education	.4	.6	6.8	39.6	52.6	-	-	-	31.6	68.4
Health Occupations	-	-	-	18.7	81.3	.3	1.0	12.1	41.7	44.9
Home Economics	-	5.2	7.9	47.4	39.5	-	-	14.3	42.8	42.9
Business & Office	-	1.0	7.8	44.6	46.6	.7	4.0	8.1	42.1	45.2
Trade & Industrial	-	-	7.3	43.1	49.6	.2	1.6	12.9	52.7	32.5
TOTAL	.2	.8	7.1	41.9	50.0	.5	1.9	11.6	46.6	39.4
Mean Rating			4.41					4.22		

EMPLOYER OVERALL RATINGS

Vocational Agriculture	-	11.1	-	66.7	22.2	.4	.7	12.1	49.4	37.4
Distributive Education	.4	.4	6.0	44.1	49.1	-	-	-	28.9	71.1
Health Occupations	-	-	-	25.0	75.0	.3	.8	9.1	47.6	42.2
Home Economics	2.6	2.6	5.3	52.6	36.8	-	-	16.9	44.1	39.0
Business & Office	-	1.0	5.4	50.8	42.7	.7	3.4	8.2	43.1	44.6
Trade & Industrial	-	-	6.0	49.2	44.8	.2	1.3	13.2	54.0	31.3
TOTAL	.3	.5	5.7	47.5	46.0	.4	1.7	11.0	49.1	37.8
Mean Rating			4.39					4.22		

*Ratings are: 1 = Very poor 2 = Poor 3 = Neutral 4 = Good 5 = Very Good

TABLE X
1978-1979 COOP/IN-SCHOOL GRADUATES
EMPLOYER RATINGS OF TECHNICAL KNOWLEDGE (PERCENTS)

Occupational Area	Cooperative Ratings* 1	2	3	4	5	In-School Ratings 1	2	3	4	5
Vocational Agriculture	-	-	-	75.0	25.0	.4	1.5	16.2	50.6	31.3
Distributive Education	.4	.8	12.5	44.2	42.1	-	-	-	36.8	63.2
Health Occupations	-	-	6.3	18.7	75.0	.2	1.0	9.9	53.9	35.0
Home Economics	-	-	18.4	63.2	18.4	3.9	1.3	23.4	41.6	29.9
Business & Office	-	.8	9.8	43.9	35.5	.8	2.3	11.2	47.6	38.1
Trade & Industrial	-	.8	10.5	53.2	35.5	.1	2.0	17.9	50.8	29.2
TOTAL	.2	.7	11.3	49.6	38.2	.4	1.8	14.4	50.2	33.2
Mean Rating			4.25					4.14		

EMPLOYER RATINGS OF WORK ATTITUDE

Vocational Agriculture	-	11.1	-	44.4	44.4	.4	2.3	11.7	39.2	46.4
Distributive Education	.6	.6	6.0	37.6	55.2	-	-	-	39.5	60.5
Health Occupations	-	-	-	25.0	75.0	.3	2.0	9.8	35.8	52.1
Home Economics	2.6	5.3	10.5	36.8	44.7	-	6.5	13.0	35.1	45.4
Business & Office	.3	1.3	9.3	32.1	57.0	1.7	2.8	6.3	29.4	59.7
Trade & Industrial	-	.4	6.9	35.9	56.8	.3	1.8	11.9	45.5	40.5
TOTAL	.4	1.0	7.2	35.4	56.0	.7	2.2	10.0	38.8	48.3
Mean Rating			4.46					4.32		

*Ratings are: 1 = Very Poor 2 = Poor 3 = Neutral 4 = Good 5 = Very Good

TABLE XI
1978-1979 COOP/IN-SCHOOL GRADUATES
EMPLOYER COMPARISON OF RELATIVE PREPARATION (PERCENTS)

Occupational Area	Cooperative Rating*			In-School Rating		
	q	r	s	q	r	s
Vocational Agri.	100	-	-	87.3	12.7	-
Distributive Educ.	87.3	12.5	.2	84.2	15.8	-
Health Occupations	92.9	7.1	-	75.6	23.2	1.1
Home Economics	81.8	19.2	-	86.2	12.3	1.5
Business & Office	84.5	14.4	1.1	79.2	19.4	1.4
Trade & Industrial	83.9	16.1	-	90.0	9.6	.4
TOTAL	85.8	13.8	.4	84.6	14.7	.7

*Ratings are: q = This student is better prepared than nonvocational employees
r = Vocational and nonvocational employees about the same
s = This student is less well-prepared than nonvocational employees

Note: There were 229 cooperative and 858 noncooperative students on whom employers were unable to make comparisons.

Conclusions

The purpose of this study was to identify unique effects of cooperative vocational education from data already available to us and to identify variables in need of further study. Unfortunately, few positive conclusions can be drawn from data already available. Cooperative vocational education appears to enhance sex equality, yet in some areas that have been totally dominated by males, there is no effect of cooperative vocational education. The logical conclusion is that something other than the program, probably the marketplace itself, has an offsetting effect to the freedom of occupational choice associated with cooperative education.

It is difficult to reconcile results that show employers rating cooperative graduates higher yet paying lower wages to them. Obviously, further study is necessary.

A serendipitous result shows stereotyped enrollment of blacks into programs of servitude, i.e., food service, child care, and custodial service. Since this is true regardless of program type, counseling and student selection should be improved in those areas.

The major conclusion of this phase of the study is that cooperative vocational education has not demonstrated any unique effects on the variables studied. Further study should consider additional variables such as student aptitudes, level of skill achievement, and job advancement.

TABLE XII
NUMBER OF STUDENTS IN THE STUDY

Occupational Objective	Cooperative	In-School
1976-1979 Numbers		
Production Agriculture	428	40,198
Other Agriculture	499	18,668
Distributive Education	10,866	864
Health Services	350	4,133
Food Management	385	1,535
Child Care	314	1,211
Other Home Economics	589	2,079
Business & Office	5,376	8.344
Auto Body Repair	59	2,344
Auto Mechanics	278	8,593
Carpentry	229	6,523
Electricity	112	1,692
Electronics	48	2,515
Printing	74	2,011
Machine Shop	60	1,916
Welding	79	3,851
Custodial Services	189	663
Other T & I	3,193	15,358
TOTAL	23,213	122,498
1978-1979 Numbers (Employer Followup)		
Vocational Agriculture	9	453
Distributive Education	527	38
Health Occupations	18	618
Home Economics	38	84
Business & Office	419	763
Trade & Industrial	255	1,485
TOTAL	1,266	3,441